INFLUENCE OF SHOCK-INDUCED IONOSPHERIC CONDUCTIVITY ENHANCEMENTS ON STORM MAIN PHASE INTENSITIES

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Interplanetary shocks lead to SIs and SSCs (SIs with following magnetic storm main phases). It is well known that the IMF BS within the interplanetary sheaths and magnetic clouds lead to strong magnetic reconnection and the main phases of magnetic storms. However, the shocks themselves can cause enhanced dayside aurora and nightside pseudobreakups (PBs) and substorm expansion phases. Interplanetary shocks compress the outer magnetosphere, lead to adiabatic compression of pre-existing magnetospheric plasma, and loss of particles to the ionosphere by the loss cone instability. The particle loss is associated with the auroral light intensification and also enhanced ionospheric conductivity.

The latter effect, enhanced ionospheric conductivity, may influence the intensity of the magnetic storm main phase which follows. We examine the WIND 1997 interplanetary shocks to study dayside aurora, nightside PBs and substorms. We study Ulysses 1997 shocks to determine the variation of post-shock ram pressure increases as a function of radial distance, heliographic latitude and longitude.

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4. 0
5. None
6. No
7. No